Space Weather Forecast

Issued on Saturday 1 March 2025 at 12:51 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of Moderate-class flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with occasional common class flares. The largest of these was at 01/0830 UTC from a region in the northeast disc. There are six regions currently on the Earth-facing disc, with two of note due to their recent developments, although currently appear stable. The first is just west of the south-centre disc, with the second in the northeast. The first is is a very small region, but with an unusual magnetic structure, with both its trailer and leader of the same magnetic polarity but with opposite polarity spots in between. The second is magnetically simpler, maturing into a bipolar group, although no further growth observed. The other regions remain smaller and simpler.

No Earth directed Coronal Mass Ejections (CMEs) occurred.

Solar Wind / Geomagnetic Activity: Solar winds are indicative of a connection to a strong positive coronal hole fast wind. Solar wind speeds have been at Strong levels, between 630 and 770km/s, gradually easing a little back to near 700km/s. The Magnetic Field, Bt, eased from Moderate to Weak. The north-south component was Moderate at first, but tended to be Weak and predominately positive (northward) from 28/1530 UTC. Geomagnetic activity was mostly Unsettled to Active (Kp3-4) during the period.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) eased from being very slightly above background, to be at background, and well below the S1 Minor Radiation Storm level.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Low to Moderate with an ongoing chance of isolated Moderate class flares.

Solar Wind / Geomagnetic Activity: There was a chance of a glancing CME impact early on 01 Mar, from the filament eruption off the east disc on 26 Feb, although this looks to have missed Earth. Otherwise, ongoing fast wind influence from CH19/+ at first is expected to gradually ease, with Strong winds gradually and erratically easing to Background. Geomagnetic activity will be mostly Unsettled to Active on Day 1 (01 Mar), becoming mainly Quiet to Unsettled by Day 3 (03 Mar).

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is expected to be at background with no Solar Radiation Storms occurring.

Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	5	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	40	40	40	40
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.